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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/089,312 | 06/02/1998 | STEWART FINDLATER | CISCP035 | 2703 |

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| EXAMINER |
|---|
| HOM, SHICK C |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2666 | |

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/089,312 | FINDLATER ET AL. | |
| | Examiner | Art Unit | |
| | Shick C Hom | 2666 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *23 August 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 8-23-02 have been fully considered but they are not persuasive.

### *Drawings*

2. The drawings submitted with this application were declared informal by the applicant. Accordingly they have not been reviewed by a draftsperson at this time. When formal drawings are submitted, the draftsperson will perform a review.

Direct any inquires concerning drawing review to the Drawing Review Branch (703) 305-8404.

### *Specification*

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 112***

4. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1 line 6 which recite "a 100 MHZ time-division multiplexed signal" is not clear as to whether it is reciting ---said 100 MHZ time-division multiplexed signal--- of claim 1 line 3 or ---a second 100 MHZ time-division multiplexed signal---. In claims 2, 4-6 line 1 which recite "the time-division multiplexed receive control signal" is not clear as to whether it is reciting ---said the time-division multiplexed receive control signals--- of claim 1 line 4. In claims 7, 9-10 line 1 which recite "the time-division multiplexed transmit control signal" is not clear as to whether it is reciting ---said the time-division multiplexed transmit control signals--- of claim 1 line 7. In claims 3 and 8 line 2 which recite "a 4 bit segment" are not clear as to whether they're reciting ---said each 4 bit segment--- of claims 2 and 7 line 2, respectively. In claims 11-14 line 1 which recite "the PHY" lacks clear antecedent basis because no PHY have been previously recited in the claims and therefore the

limitation is not clearly understood; further it is not clear as to whether it is reciting ---said physical layer--- of claim 1 line 2. In claims 13-14 line 2 which recite "the MAC" lacks clear antecedent basis and is not clear as to whether it is reciting ---said media access control layer--- of claim 1 line 1. In claim 15 line 8 and claim 16 line 9 which recite the "receive control signals" is not clear as to whether there's a typo and it is reciting the ---transmit control signals--- as in claim 1 line 7. Further, in claim 18 line 2 which recite "signals comprising a transmit enable signal and a transmit error signal" is not clear as to whether is it reciting ---said receive control signals comprising a transmit enable signal and a transmit error signal--- of claim 16 line 9 or ---transmit control signals comprising a transmit enable signal and a transmit error signal---.

Claim 16 is rejected under 35 U.S.C. 112, second paragraph because it depends on rejected claim 16.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-

> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

6. Claim 16 is rejected under 35 U.S.C. 102(e) as being anticipated by Runaldue et al.

Runaldue et al. disclose all the subject matter now claimed. Note Fig. 3 which shows the multiplexer interface between the MAC and PHY including the time-division multiplexed data and control, i.e. clock, lines for receive and transmit clearly anticipate the method of communicating between a MAC and PHY including the multiplexed receive and transmit data and the multiplexed receive and transmit control lines as in claim 16. Col. 4 lines 4-12 which recite the multiplexer being controlled by a system clock clearly anticipate the common clock as in claim 16. Col. 2 line 48 to col. 3 lines 15-20 which recite the TXCLK signal for synchronized to the network rate and the RXCLK signal which provides the reference clock used to latch incoming network data whereby the RXCLK signal is valid when the RXDATA is valid and

col. 4 lines 26-33 which recite the RXDATAVALID signal that is used to determine when data on the RXDATA bus is valid clearly anticipate the receive line synchronization bit as in claims 2-3, the transmit line synchronization bit as in claims 7-8, and the receive data valid bit as in claim 4. Col. 1 line 65 to col. 2 line 10 which recite a method of indicating the speed of the line having the interfaces which provides connections between respective MAC and PHY devices whereby the interfaces operates at a first data rate having the pad member coupled to the multiplexer receiving multiplexed signals from the interfaces wherein the multiplexer operates at a second data rate being a multiple of the first data rate and col. 2 lines 48-64 which recite the using the TXCLK clock signal being synchronized to the network rate clearly anticipate the step of indicating the speed of the line as in claims 11 and 12.

In page 3 line 14 to page 4 13 of the 8/23/02 amendment, applicant argued that the cited prior art fails to teach or suggest multiplexing (or a control line for multiplexing) functionally different types of signals is not persuasive because page 8 lines 7-10 of the specification merely recite "The transmit control line conveys the transmit enable and transmit error information using time-division multiplexing. The receive control line conveys the receive data valid, receive error and

carrier sense control information using time-division multiplexing" no multiplexing (or a control line for multiplexing) functionally different types of signals as argued have been clearly recited. Further, Runaldue in Fig. 3 which shows the multiplexer interface signals (CLOCK, TXDATA, TXEN, COL, CRS, RXDATA, and RXDATAVALID) between a MAC and PHY for every four general purpose serial interface GPSI connections as shown in Fig. 2, clearly reads on multiplexing functionally different types of signals as in claims 1-18.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant

is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-15 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Runaldue et al. as applied to claim 16 above, and further in view of Chow et al.

Runaldue et al. did not teach the 100 MHZ receive and transmit data lines as in claim 1, the interface being between a first MAC and a second MAC as in claim 15, a receive and transmit error bit as in claims 5, 10, 17, 18 and a carrier sense bit as in claims 6, 17. Runaldue et al. did not teach using an elasticity buffer that is long enough and at least 27 bits long to buffer data from a data source as in claims 13-14. Runaldue et al. did not teach a transmit enable bit as in claims 9, 18.

Chow et al. teach that it is known to provide interface between media access control MAC ports 60 and MAC ports 62 whereby each of the MAC ports 60, 62 has a receive first-in-first-out FIFO buffer and transmit FIFO buffer as shown in

Fig. 3A in the field of digital and multiplex communications for the purpose of more robust method of sending and receiving data packets which clearly anticipate the interface being between a first MAC and a second MAC as in claim 15 and the elasticity buffer that is long enough to buffer data from a data source as in claim 14; further, col. 6 lines 9-27 which recite the PCI interface being a 32-bit clearly anticipate the buffer being least 27 bits long as in claim 13. Col. 7 lines 23-32 which recite generating and outputting the carrier sense signal to the MAC clearly anticipate the carrier sense bit as in claims 6, 17. Col. 1 line 56 to col. 2 line 6 which recite the TXC line being a free running clock signal provided by the MAC to strobe out serial NRZ (Non-Return to Zero) transmit data wherein the TXE line indicates valid transmit data from the MAC and frames an entire packet and the CRS line for indicating valid data on the RXD line clearly anticipate the receive and transmit error bit as in claims 5, 10, 17, and 18. Col. 6 lines 28-62 which recite the interface receiving the transmit enable TXE signal clearly anticipate the transmit enable bit as in claims 9, 18.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the 100 MHZ receive and transmit data lines, the interface being between a first MAC and a second MAC, the receive and transmit error bit,

the carrier sense bit, using an elasticity buffer that is long enough and at least 27 bits long to buffer data from a data source, and the transmit enable bit as taught in Chow et al. to the system of Runaldue et al. because Chow et al. teach the desirable advantage of providing a more robust method of sending and receiving data packets and said more robust packet switching being desirable to achieve efficient system operation in Runaldue et al.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
Vasile et al. disclose optical control of TR modules.

10. **Any response to this final action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(703) 872-9314, (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (2600 Receptionist at (703) 305-4750).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shick Hom whose telephone number is (703) 305-4742. The examiner's regular work schedule is Monday to Friday from 8:00 am to 5:30 pm EST and out of office on alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao, can be reached at (703) 308-5463.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

SH

Shick Hom

November 4, 2002